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(54) **BIOREACTOR SYSTEM FOR
THREE-DIMENSIONAL TISSUE
STIMULATOR**

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435/395
See application file for complete search history.

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(57) **ABSTRACT**

A bioreactor system for growing and conditioning tissue for research and implantation in a human or animal body is disclosed which includes one or more tissue growth chambers for growing and conditioning tissue, each chamber being defined by a housing and providing a fluid culture media cavity which can act as a reservoir. A construct for growing three-dimensional tissues is housed in each tissue growth chamber. Each chamber is connected to a source of pressurized air for applying a controlled pressure to the chamber media cavity. The tissue growth chambers can be mounted on an agitation device such as a shaker system which enhances mass transport within the chamber media cavity. A control system is provided to control the pressure and temperature of the pressurized gas delivered to the chamber media cavity and subsequently to the tissue construct.

31 Claims, 7 Drawing Sheets

